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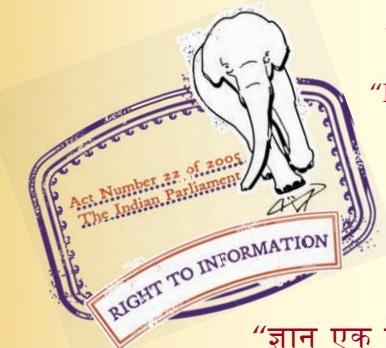
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IS 4530 (2006): General requirements for positioning and routing of engine exhaust pipes in motor vehicles [TED 6: Automotive Body, Chassis, Accessories and Garage Equipments]

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“Knowledge is such a treasure which cannot be stolen”





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( पहला पुनरीक्षण )

*Indian Standard*

GENERAL REQUIREMENTS FOR POSITIONING  
AND ROUTING OF ENGINE EXHAUST PIPES  
IN MOTOR VEHICLES

( *First Revision* )

ICS 43.040.50

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BUREAU OF INDIAN STANDARDS  
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## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Automotive Body, Chassis, Accessories and Garage Equipment Sectional Committee had been approved by the Transport Engineering Division Council.

This standard was first published in 1968. This revision has been taken up in view of the experience gained over the years.

Engine exhaust pipes are used in automobiles in order to convey and release to the atmosphere the exhaust gases produced by the engine in such a manner that no discomfort, nuisance or health hazard accrues either to the persons travelling in the vehicle or to other users of the road.

The routing of the exhaust pipes in a vehicle, from the engine to the final exit or tail pipe, is left to the vehicle manufacturer who bases it on his own design and space considerations. At the same time, however, it is obligatory on his part to observe and to adhere to *Central Motor Vehicle Rules (CMVR), 1989* which are concerned with the prevention of accidents, fires and health hazards on public roads.

The recommendations of this standard are not intended to change the existing designs but shall be taken as guidance for all new designs. This standard is being prepared to ensure ease of replacement and fitment of exhaust systems and to prevent accident and health hazards on public roads. It may be mentioned that in case of any variance from the statutory requirements, the statutory regulations shall apply.

The standards on the routing of exhaust system for motor vehicles running on CNG or LPG fuel are under preparation and are likely to be available shortly.

For the fitment of exhaust pipe of the tankers carrying explosives and inflammable goods, specification of Department of Explosives shall be applicable.

In reporting the results of a test or analysis made in accordance with this standard, if the final value, observed or calculated, is to be rounded off, it shall be done in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'.

*Indian Standard*

# GENERAL REQUIREMENTS FOR POSITIONING AND ROUTING OF ENGINE EXHAUST PIPES IN MOTOR VEHICLES

*(First Revision)*

## **1 SCOPE**

1.1 This standard covers the general requirements governing the positioning and routing of exhaust pipes in motor vehicles covered under IS 14272 (Part 1). This standard does not cover the requirements of positioning and routing of exhaust pipe for battery operated vehicles, two wheelers and agricultural tractors.

1.2 This standard does not cover the requirements, materials and dimensions for components of exhaust systems.

1.3 The standard does not cover fitment of exhaust pipe of tankers carrying explosive and inflammatory goods and motor vehicles running on CNG and LPG fuels.

## **2 REFERENCE**

The following standard contains provision which through reference in this text, constitutes provision of this standard. At the time of publication, the editions indicated was valid. All standards are subject to revision and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below:

<i>IS No.</i>	<i>Title</i>
14272 (Part 1) : 1995	Automotive vehicles — Types — Terminology: Part 1 Three and four wheelers

## **3 GENERAL REQUIREMENTS**

3.1 Every motor vehicle shall be fitted with a device (hereinafter referred to as a silencer) which by means of an expansion chamber or otherwise reduces as far as practicable, the noise that would otherwise be made by the escape of exhaust gases from the engine.

3.2 No person shall in any public place, make use of any cut-out or other device by means of which the exhaust gases of the engine are released, save through the silencer.

## **4 ROUTING OF EXHAUST PIPE LINE**

4.1 Every motor vehicle shall be fitted with an exhaust pipe which is constructed and maintained in such a manner that no visible smoke, vapour, grit, sparks, ashes, cinders or oily substance is emitted which is harmful to persons or property and which is likely to endanger the safety of other users of the road.

4.2 The exhaust pipe of every motor vehicle shall be so fitted or shielded that no inflammable material may fall or be thrown upon it from other parts of the vehicle and that it is not likely to cause fire on account of proximity to any inflammable material.

### **4.3 Location of Exhaust Pipe**

No exhaust pipe shall be located within a distance of 35 mm from the fuel line connecting to the fuel tank and engine.

## **5 DISCHARGE OF EXHAUST GASES**

5.1 Every motor vehicle shall be so constructed or equipped that the exhaust gases from the engine are discharged neither downward nor to the left side of the vehicle and shall be so fitted as to allow the gases to escape to the right side or rear of the vehicle.

5.2 Provided that in the vehicles where the exhaust gases are discharged to the right of the vehicle, slight downward angle shall be permitted, provided the exhaust gases do not kick up any dust when the vehicle is stationary and engine running and in any case the angle of the pipe to the horizontal should not be more than 30°.

5.3 Provided also that where the exhaust gases are discharged to the left of the vehicle the inclination of exhaust pipe should not cross 30° in downward and 30° in left direction against the vertical plane which includes the vehicle centre line, provided that exhaust gases do not kick up any dust when the vehicle is stationary and the engine running.

**5.4** Provided also that in case of construction equipment vehicle vertical exhaust pipe may be fitted and outlet of this pipe shall be so directed that the driver of the vehicle is not exposed to exhaust gases.

**5.5** The outlet end or tail pipe of the exhaust line shall be positioned so as not to project:

- a) laterally more than 355 mm from the centre line of

rear right wheel in the case of single-rear-wheeled vehicles,

b) laterally more than 152 mm from the extreme outer edge of the outer right rear wheel in the case of dual-rear-wheeled vehicles, and

c) more than 50 mm rearwards of the rearmost point of the rear bumper.

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### Amendments Issued Since Publication

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